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NOMENCLATURE NOTES ON THE SCAPHOPOD MOLLUSCA:  
THE TYPE SPECIES OF FUSTIARIA AND PSEUDANTALIS<sup>1</sup>

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A number of nomenclature problems were encountered by the writer during the preparation of a manuscript pertaining to the type species of the genera and subgenera which comprise the molluscan class Scaphopoda. The purpose of this paper is to outline the nomenclature history and indicate the genotype species of the "subgenera," *Fustiaria* and *Pseudantalis*.

FUSTIARIA Stoliczka, 1868

Stoliczka (1868:439) proposed *Fustiaria*, without designating a type species, for *Dentalium eburneum* Lamarek (1818:346), *D. circinatum* Sowerby (1823:f.5), and "others figured by Sowerby [1823] in his 'Genera of Shells,' by Deshayes [1864] in his last edition of the 'Paris Fossils.'" He provided the following description, "shell tubular, thin, usually slightly curved, smooth, posterior end with a long, linear slit on or near the ventral side." Stoliczka appears to have intended this group to include all species possessing a long, straight cleft on the convex face. However, with the exception of his citation of Sowerby and Deshayes' figures of *D. circinatum* and *D. eburneum*, no reference was made to forms possessing encircling grooves which divide the surface into many narrow segments. Since such an annular striate species, *D. circinatum* Sowerby (here illustrated pl. IX, fig. 1) was contained in the original list of species, Cossmann (1888:9) and subsequent writers have justifiably expanded the original concept of the group to include both smooth and annulated species which have the long linear mid-convex slit.

The designation of "*Dentalium eburneum* Linnaeus, *Systema Naturae*, 1767" by Newton and Harris (1894:64) appears to be the earliest genotype designation. It should be noted that Stoliczka (1868:439) credited *D. eburneum* to Lamarek, not Linné; Lamarek (1818:346) in turn listed in the synonymy of his *D. eburneum* a reference to Linné (1767:1264) and considered his *D. eburneum* identical with the Linnæan species. Most subsequent writers, including Pilsbry and Sharp (1897:116), have followed this interpretation. On the basis of the foregoing, this designation apparently should be considered as being valid. How-

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ever, Dr. N. H. Ludbrook<sup>3</sup> kindly informed the writer that Favre (1912: 346) found Lamarck's specimens of "*D. eburneum*" contained in the Museum d'Histoire Naturelle de Genève to be actually the Grignon Eocene fossil, *D. subeburneum* d'Orbigny (1850:372), here illustrated pl. IX, fig. 4. Dr. Ludbrook personally examined this material and substantiated Favre's earlier findings. The validity of the designation thus becomes open to question. It should be noted that under the Régles in effect prior to 1951, Opinions 65 and 168 might be interpreted as validating the above designation, and this situation is apparently similarly covered in the revised Régles,<sup>4</sup> which unfortunately are not at the time of this writing in print.

The acceptance of *Dentalium eburneum* as the type species would be an unfortunate choice as considerable confusion exists concerning the true identity of this species and would necessitate changing the current concept of the subgenus. An examination by Hanley (1855) of the Linnaean collection deposited in the Linnaean Society of London disclosed that the holotype is Recent and that the fossil "*D. eburneum*" specimens of most nineteenth century authors writing before 1855 are referable to *Dentalium politum* Linné (1767:1264) from the Eocene of the Paris Basin.<sup>5</sup> On the basis of Stoliczka's citation of figures, his reference to "*Dentalium eburneum*, Lamck." undoubtedly refers to a fossil, either *D. politum* Linné, 1767, or more probably *D. subeburneum* d'Orbigny (1850:372) from the Paris Basin Eocene. Nevertheless, *D. eburneum* Linné (1767:1264) here illustrated, pl. IX, fig. 6, is a Recent species which has numerous, unequal, irregularly spaced, annular wrinkles, and lacks the long, linear slit which characterizes the fossil species, e.g. *D. lucidum* Lamarck, 1818 and *D. circinatum* Sowerby, 1823, here illustrated, pl. IX, figs. 1, 5.

If the type designation of Newton and Harris (1894:64) is accepted as the earliest valid designation, a new subgeneric name would have to be proposed for the *Fustiaria* group of authors. Under this interpretation the name *Fustiaria* would be, of necessity, restricted to the Recent species, *Dentalium eburneum* Linné, *D. philippinarum* Sowerby (1860: 98) here illustrated, pl. IX, fig. 7, and possibly *D. siculum* Pilsbry and Sharp (1897:107).

Rather than change the generally accepted, and apparently the original, concept of *Fustiaria*, the writer believes it would be advantageous to consider the designation of Newton and Harris to be invalid because Stoliczka's original list of species assigned to *Fustiaria* did not include *Dentalium eburneum* of Linné. Under this interpretation, the validation of the genotype species would date from the next available designation. In addition to Newton and Harris (1894:64), Cossmann (1888:9) and Sacco (1897:112) invalidly designated *Dentalium politum* Linné (1767:1264) the genotype. Following Cossmann's (1888:9) expanded concept of the subgenus, Pilsbry and Sharp (1897:127) validly designated *D. circinatum* Sowerby (1823:f.5) the genotype species. The writer proposes that the designation of Pilsbry and Sharp be accepted

<sup>3</sup>In *littaris*, 1952.

<sup>4</sup>See Moore, R. C., p. 14, 1950.

<sup>5</sup>Recent specimens also have been referred to this species by a number of writers.

as the first available designation with *Dentalium circinatum* Sowerby (1823) here illustrated, pl. IX, figs. 1, 3, the genotype species.

PSEUDANTALIS Monterosato, 1884

Monterosato (1884:32) proposed *Pseudantalis* without designating a genotype for a heterogenous group of species, namely: *Dentalium fissura* Lamarek (=subgen. *Fustiaria*), *D. inversum* Deshayes (=subgen. *Graptaceme*), *D. rubescens* Deshayes (=subgen. ?*Laeidentalium*), *D. tenuifissa* Monterosato (=subgen. *Fustiaria*), and *D. filum* Sowerby (=subgen. *Episiphon*). Pilsbry and Sharp (1897:127), following the usage of Fischer (1885:894) and Cossmann (1888:9), placed *Pseudantalis* in the synonymy of *Fustiaria* Stoliczka (1868:439), but did not designate a type species. Subsequently, Pilsbry (1939:139), remarked, "*Pseudantalis* Monterosato, Nom. Gen. e Spec. Conch. Medit., p. 32, (1884) was proposed for several species but without designation of type," and completed his note by stating, "*P. rubescens* (*Dentalium rubescens* Desh.) is to be taken as genotype." Approximately eight years later Pilsbry (1947:31) commented in another note, "[the] type of *Pseudantalis* Monterosato, 1884, . . . was not stated in original publication, and I believe not elsewhere. *Dentalium fissura* Lamarek is now [here] designated type."

Sacco's (1897:111) designation of "*P.[seudantalis] rubescens* Desh. [ayes]" as the genotype species of "*Sottog. Pseudantalis* Montrs. 1884" apparently is the earliest available designation. This species, on the basis of its apparent lack of a long, medial apical slit, is generally assigned to the "subgenus" *Laeidentalium* Cossmann (1888:7), genotype by original designation: *Dentalium incertum* Deshayes (1825:362), here illustrated: pl. IX, fig. 9. If the two units were considered to be synonymous, *Pseudantalis* (1884) would be a senior subjective synonym of *Laeidentalium* (1888). This interpretation would constitute an unfortunate nomenclature change as *Laeidentalium* is commonly used for most members of the Dentaliidae which possess a smooth, non-sculptured shell surface.

Fortunately, there appears to be justification for the allocation of *Dentalium rubescens* to the subgenus *Fustiaria*; thus retaining the generally used concept of *Pseudantalis* as a junior subjective synonym of *Fustiaria*. Monterosato (1884:32-33) and Boissevain (1906:60), have pointed out that the apical features of *D. rubescens sensu lato* vary considerably among individuals from the same population. As described by Deshayes (1825:363), the "typical" form of this species is characterized by the possession of a long internal groove which usually terminates at the apical rim in a small usb-triangle notch see pl. IX, fig. 8. In other specimens a long, narrow, medial slit cuts the convex surface of the posterior portion of the tube, see pl. IX, fig. 11. In some individuals, the apical slit is not continuous, being blocked by a closure in the slit, see pl. IX, fig. 12. Monterosato (1884:33) recognized the diversity of the apical features and proposed the name *tenuifissa* to distinguish the fissured form. Due to a scarcity of specimens for comparison, most subsequent authors, including Pilsbry and Sharp (1897:107, 129) and Boissevain (1906:59-60), provisionally assigned Monterosato's fissured form, "*D. tenuifissa*," to the subgenus *Fustiaria* and placed

the externally unslit form, *D. rubescens*, in the "subgenus" *Laevidentalium*.

On the basis of the available data, *D. tenuifissa* appears to represent nothing more than an infrasubspecific form of the *D. rubescens* species complex. The writer proposes that the generally accepted concept of *Pseudantalis*, be retained by allocating the apparent genotype species, *D. rubescens* Deshayes, to the subgenus *Fustiaria*. Under this interpretation, *Pseudantalis* would continue as a junior subjective synonym of *Fustiaria*.

It should be noted that the development of polymorphic apical characters in the species comprising the subgenus *Fustiaria* considerably reduces the biological significance of this "subgeneric unit." It is quite evident that the higher categories of the Dentaliidae require a thorough re-evaluation in the light of present knowledge. Such an evaluation is beyond the scope of this paper.

#### CONCLUSION

On the basis of the data presented above, *Pseudantalis* (genotype: *Dentalium rubescens* Deshayes, 1825) is a junior subjective synonym of *Fustiaria* (genotype: *Dentalium circinatum* Sowerby, 1823).

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## EXPLANATION OF PLATE

- Fig. 1 *Dentalium circinatum* Sowerby, 1823, after Sowerby 1823, fig. 5.
- 2 *Dentalium subeburneum* d'Orbigny, 1850, p. 216, after Sowerby 1823, fig. 6, as *D. eburneum*.
- 3 *Dentalium circinatum* Sowerby, 1823, after Deshayes 1866, pl. 2, fig. 10; enlargement of convex face showing the medial slit.
- 4 *Dentalium subeburneum* d'Orbigny, 1850, Grignon, Paris Basin Eocene.
- 5 *Dentalium circinatum* Sowerby, 1823, Grignon, Paris Basin Eocene.
- 6 *Dentalium eburneum* Linné, 1767, after Boissvain 1906, from Sowerby 1860, pl. 225, fig. 53.
- 7 *Dentalium philippinarum* Sowerby, 1860, after Sowerby 1860, pl. 225, fig. 54.
- 8 *Dentalium rubescens* Deshayes, 1825, after Deshayes 1825, pl. 16, fig. 24; enlargement of apical portion showing notch.
- 9 *Dentalium incertum* Deshayes, 1825, after Deshayes 1866, pl. 1, fig. 26.
- 10 *Dentalium rubescens* Deshayes, 1825, after Deshayes 1825, pl. 16, fig. 23. (This figure is inadvertently marked 0 instead of 10 on the plate.)
- 11 *Dentalium rubescens forma tenuifissa* Monterosato, 1884; Recent, enlargement of apical portion showing slit.
- 12 *Dentalium rubescens forma tenuifissa* Monterosato, 1884; Recent, enlargement of apical portion showing slit.

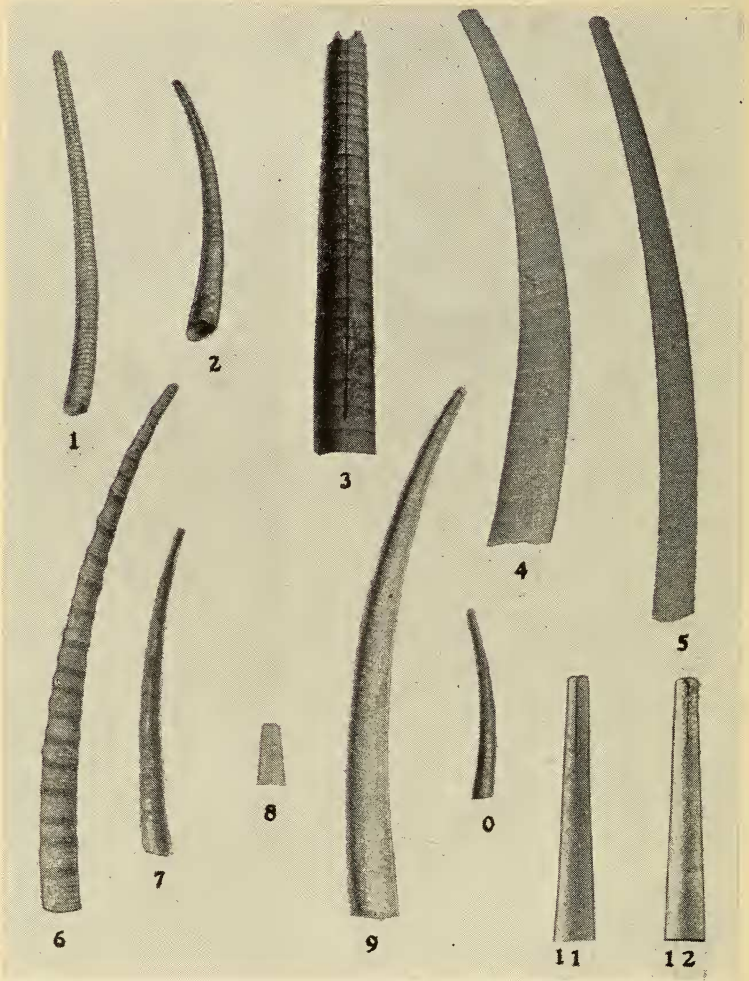


Plate X